

November 18, 2021

Lawrence Quick
City of Robinson WWTF
P.O. Box 188
Robinson, IL 62454
TEL: (618) 544-8110
FAX:



Illinois	100226
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

RE: Quarterly Sludge

WorkOrder: 21110534

Dear Lawrence Quick:

TEKLAB, INC received 8 samples on 11/8/2021 1:35:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,



Elizabeth A. Hurley
Project Manager
(618)344-1004 ex 33
ehurley@teklabinc.com

Client: City of Robinson WWTF

Work Order: 21110534

Client Project: Quarterly Sludge

Report Date: 18-Nov-21

This reporting package includes the following:

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Client: City of Robinson WWTF

Work Order: 21110534

Client Project: Quarterly Sludge

Report Date: 18-Nov-21

Abbr Definition

* Analytes on report marked with an asterisk are not NELAP accredited

CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.

CRQL A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.

DF Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.

DNI Did not ignite

DUP Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.

ICV Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.

IDPH IL Dept. of Public Health

LCS Laboratory control sample is a sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.

LCSD Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).

MBLK Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.

MDL "The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."

MS Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).

MSD Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).

MW Molecular weight

NC Data is not acceptable for compliance purposes

ND Not Detected at the Reporting Limit

NELAP NELAP Accredited

PQL Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.

RL The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.

RPD Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).

SPK The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.

Surr Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.

TIC Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"

TNTC Too numerous to count (> 200 CFU)

Client: City of Robinson WWTF

Work Order: 21110534

Client Project: Quarterly Sludge

Report Date: 18-Nov-21

Qualifiers

- | | |
|---|--|
| # - Unknown hydrocarbon | B - Analyte detected in associated Method Blank |
| C - RL shown is a Client Requested Quantitation Limit | E - Value above quantitation range |
| H - Holding times exceeded | I - Associated internal standard was outside method criteria |
| J - Analyte detected below quantitation limits | M - Manual Integration used to determine area response |
| ND - Not Detected at the Reporting Limit | R - RPD outside accepted recovery limits |
| S - Spike Recovery outside recovery limits | T - TIC(Tentatively identified compound) |
| X - Value exceeds Maximum Contaminant Level | |



Case Narrative

<http://www.teklabinc.com/>

Client: City of Robinson WWTF

Work Order: 21110534

Client Project: Quarterly Sludge

Report Date: 18-Nov-21

Cooler Receipt Temp: 2.6 °C

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Client: City of Robinson WWTF**Work Order:** 21110534**Client Project:** Quarterly Sludge**Report Date:** 18-Nov-21

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2022	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2022	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2022	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2022	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2022	Collinsville
Arkansas	ADEQ	88-0966		3/14/2022	Collinsville
Illinois	IDPH	17584		5/31/2021	Collinsville
Kentucky	UST	0073		1/31/2022	Collinsville
Missouri	MDNR	00930		5/31/2021	Collinsville
Missouri	MDNR	930		1/31/2022	Collinsville

Client: City of Robinson WWTF

Work Order: 21110534

Client Project: Quarterly Sludge

Report Date: 18-Nov-21

Lab ID: 21110534-001

Client Sample ID: Semi-Annual Sludge

Matrix: SLUDGE

Collection Date: 11/08/2021 10:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 600 351.2 R2.0 (TOTAL)								
Total Kjeldahl Nitrogen (as N)	NELAP	13700		57700	mg/Kg-dry	10	11/11/2021 11:40	184893
EPA 600 365.4 (MODIFIED)								
Phosphorus (as P ₂ O ₅)	*	2		62300	mg/Kg-dry	1	11/11/2021 0:00	R302518
Phosphorus, Total (As P)	NELAP	1370		27200	mg/Kg-dry	10	11/11/2021 11:38	184891
EPA OIA-1677 AVAILABLE CYANIDE, APPLICATION NOTE 25520206, MODIFIED								
Available Cyanide	*	2.73		< 2.73	mg/Kg-dry	10	11/15/2021 11:05	184845
<i>Elevated reporting limit due to matrix interference.</i>								
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture	*	0.1		81.8	%	1	11/09/2021 10:17	R302435
STANDARD METHODS 2540 G 1997, 2011								
Total Solids	*	0.1		18.2	%	1	11/09/2021 10:17	R302435
Total Volatile Solids	*	0.1		63.3	%	1	11/09/2021 10:17	R302435
STANDARD METHODS 4500-NH₃ B G 1997, 2011								
Nitrogen, Ammonia (as N)	*	538	R	6260	mg/Kg-dry	10	11/10/2021 15:16	184840
<i>RPD for sample and duplicate was outside control limits due to sample composition.</i>								
SW-846 7196A								
Chromium, Hexavalent	NELAP	0.054	S	< 0.054	mg/Kg-dry	1	11/09/2021 12:33	184810
<i>Results of the matrix spike have less certainty because value exceeds upper quantitation limits.</i>								
<i>Matrix spike did not recover within control limits due to matrix interference.</i>								
SW-846 9012A (TOTAL)								
Cyanide	NELAP	1.22		< 1.22	mg/Kg-dry	1	11/16/2021 13:25	185017
SW-846 9045C								
pH (1:1)	NELAP	1.00		7.97		1	11/15/2021 14:28	R302676
SW-846 3050B, 6010B, METALS BY ICP								
Antimony	NELAP	4.72		< 4.72	mg/Kg-dry	1	11/15/2021 15:48	184928
Arsenic	NELAP	2.40		6.32	mg/Kg-dry	1	11/15/2021 14:39	184930
Barium	NELAP	0.48		401	mg/Kg-dry	1	11/12/2021 19:56	184930
Beryllium	NELAP	0.05		0.48	mg/Kg-dry	1	11/12/2021 19:56	184930
Cadmium	NELAP	0.19		0.78	mg/Kg-dry	1	11/12/2021 19:56	184930
Chromium	NELAP	0.48		19.8	mg/Kg-dry	1	11/12/2021 19:56	184930
Copper	NELAP	0.48		429	mg/Kg-dry	1	11/12/2021 19:56	184930
Iron	NELAP	4.81		10200	mg/Kg-dry	1	11/12/2021 19:56	184930
Lead	NELAP	1.44		25.2	mg/Kg-dry	1	11/12/2021 19:56	184930
Manganese	NELAP	0.43		539	mg/Kg-dry	1	11/12/2021 19:56	184930
Molybdenum	NELAP	0.96		5.01	mg/Kg-dry	1	11/12/2021 19:56	184930
Nickel	NELAP	0.48		19.9	mg/Kg-dry	1	11/12/2021 19:56	184930
Potassium	NELAP	96.2		3440	mg/Kg-dry	10	11/12/2021 19:54	184930
Potassium, Total (as K ₂ O)	*	12		4150	mg/Kg-dry	1	11/12/2021 0:00	R302596
Selenium	NELAP	3.85		6.84	mg/Kg-dry	1	11/12/2021 19:56	184930
Silver	NELAP	0.48		1.75	mg/Kg-dry	1	11/12/2021 19:56	184930
Thallium	NELAP	4.81		< 4.81	mg/Kg-dry	1	11/12/2021 19:56	184930
Zinc	NELAP	2.88		732	mg/Kg-dry	1	11/12/2021 19:56	184930
SW-846 7471B								
Mercury	NELAP	0.053		0.318	mg/Kg-dry	1	11/10/2021 16:15	184857



Laboratory Results

<http://www.teklabinc.com/>

Client: City of Robinson WWTF

Work Order: 21110534

Client Project: Quarterly Sludge

Report Date: 18-Nov-21

Lab ID: 21110534-002

Client Sample ID: Fecal Sludge 1

Matrix: SLUDGE

Collection Date: 11/08/2021 10:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 22ND ED. 9222 D								
Fecal Coliform	*	45700		228000	CFU/g-dry	9901	11/08/2021 14:34	R302383
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture	*	0.1		78.3	%	1	11/09/2021 10:00	R302435



Laboratory Results

<http://www.teklabinc.com/>

Client: City of Robinson WWTF

Work Order: 21110534

Client Project: Quarterly Sludge

Report Date: 18-Nov-21

Lab ID: 21110534-003

Client Sample ID: Fecal Sludge 2

Matrix: SLUDGE

Collection Date: 11/08/2021 10:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 22ND ED. 9222 D								
Fecal Coliform	*	42800		257000	CFU/g-dry	9615	11/08/2021 14:34	R302383
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture	*	0.1		77.5	%	1	11/09/2021 10:00	R302435



Laboratory Results

<http://www.teklabinc.com/>

Client: City of Robinson WWTF

Work Order: 21110534

Client Project: Quarterly Sludge

Report Date: 18-Nov-21

Lab ID: 21110534-004

Client Sample ID: Fecal Sludge 3

Matrix: SLUDGE

Collection Date: 11/08/2021 10:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 22ND ED. 9222 D								
Fecal Coliform	*	53100		53100	CFU/g-dry	1E+04	11/08/2021 14:34	R302383
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture	*	0.1		81.2	%	1	11/09/2021 10:00	R302435



Laboratory Results

<http://www.teklabinc.com/>

Client: City of Robinson WWTF

Work Order: 21110534

Client Project: Quarterly Sludge

Report Date: 18-Nov-21

Lab ID: 21110534-005

Client Sample ID: Fecal Sludge 4

Matrix: SLUDGE

Collection Date: 11/08/2021 10:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 22ND ED. 9222 D								
Fecal Coliform	*	58500		58500	CFU/g-dry	9804	11/08/2021 14:34	R302383
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture	*	0.1		83.2	%	1	11/09/2021 10:00	R302435



Laboratory Results

<http://www.teklabinc.com/>

Client: City of Robinson WWTF

Work Order: 21110534

Client Project: Quarterly Sludge

Report Date: 18-Nov-21

Lab ID: 21110534-006

Client Sample ID: Fecal Sludge 5

Matrix: SLUDGE

Collection Date: 11/08/2021 10:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 22ND ED. 9222 D								
Fecal Coliform	*	57200		114000	CFU/g-dry	1E+04	11/08/2021 14:34	R302383
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture	*	0.1		82.5	%	1	11/09/2021 10:00	R302435



Laboratory Results

<http://www.teklabinc.com/>

Client: City of Robinson WWTF

Work Order: 21110534

Client Project: Quarterly Sludge

Report Date: 18-Nov-21

Lab ID: 21110534-007

Client Sample ID: Fecal Sludge 6

Matrix: SLUDGE

Collection Date: 11/08/2021 10:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 22ND ED. 9222 D								
Fecal Coliform	*	54300		54300	CFU/g-dry	1E+04	11/08/2021 14:34	R302383
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture	*	0.1		81.6	%	1	11/09/2021 10:00	R302435



Laboratory Results

<http://www.teklabinc.com/>

Client: City of Robinson WWTF

Work Order: 21110534

Client Project: Quarterly Sludge

Report Date: 18-Nov-21

Lab ID: 21110534-008

Client Sample ID: Fecal Sludge 7

Matrix: SLUDGE

Collection Date: 11/08/2021 10:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 22ND ED. 9222 D								
Fecal Coliform	*	47700		4150000	CFU/g-dry	9804	11/08/2021 14:34	R302383
EPA SW846 3550C, 5035A, ASTM D2974								
Percent Moisture	*	0.1		79.4	%	1	11/09/2021 10:00	R302435



Receiving Check List

<http://www.teklabinc.com/>

Client: City of Robinson WWTF

Work Order: 21110534

Client Project: Quarterly Sludge

Report Date: 18-Nov-21

Carrier: Kelly Klostermann

Received By: EEH

Completed by:

Marvin L. Darling II

Reviewed by:

Elizabeth A. Hurley

On:

08-Nov-21

Marvin L. Darling

On:

08-Nov-21

Elizabeth A. Hurley

Pages to follow:

Chain of custody

1

Extra pages included

0

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Temp °C 2.6

Type of thermal preservation?

None ☐

Ice ☒

Blue Ice ☐

Dry Ice ☐

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Reported field parameters measured:

Field ☐

Lab ☐

NA ☒

Container/Temp Blank temperature in compliance?

Yes ☒

No ☐

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?

Yes ☐

No ☐

No VOA vials ☒

Water - TOX containers have zero headspace?

Yes ☐

No ☐

No TOX containers ☒

Water - pH acceptable upon receipt?

Yes ☐

No ☐

NA ☒

NPDES/CWA TCN interferences checked/treated in the field?

Yes ☐

No ☐

NA ☒

Any No responses must be detailed below or on the COC.

Samples requiring pH should be analyzed as soon as possible after collection. Samples submitted for pH analysis are analyzed as soon as practicable upon arrival at the laboratory. - MDarling - 11/8/2021 1:48:40 PM

pg. _____ of _____ Work order # 21110534

Client:	City of Robinson WWTF		
Address:	P.O. Box 188		
City / State / Zip	Robinson, IL 62454		
Contact:	Lawrence Quick	Phone:	(618) 544-8110
E-Mail:	potw@frontier.com	Fax:	

Client Comments

Metals: Sb As Ba Be Cd Cr Cu Fe Pb Mn Mo Ni K Se Ag Ti Zn

Courier

Are these samples known to be involved in litigation? If yes, a surcharge will apply ☐ Yes ☒ No

Are these samples known to be hazardous? ☐ Yes ☒ No

Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section. ☒ Yes ☐ No

Project Name/Number		Sample Collector's Name		MATRIX		INDICATE ANALYSIS REQUESTED																		
Quarterly Sludge		Billing Instructions		# and Type of Containers		Sludge																		
Results Requested		Billing Instructions		# and Type of Containers		Sludge																		
<input checked="" type="checkbox"/> Standard <input type="checkbox"/> 1-2 Day (100% Surcharge) <input type="checkbox"/> Other _____ <input type="checkbox"/> 3 Day (50% Surcharge)																								
Lab Use Only	Sample Identification	Date/Time Sampled	UNP					Cyanide (T/Avail)	Fecal Coliform	K20	Mercury	Metals	NH3/Phos/TKN	P205	pH/CR6	TS/TVS								
2 1110534 cc1	Semi-Annual Sludge	11-8-21 10:30A	1					X		X	X	X	X	X	X	X								
cc2	Fecal Sludge 1	11-8-21 10:30A	1					X	X															
cc3	Fecal Sludge 2	11-8-21 10:30A	1					X	X															
cc4	Fecal Sludge 3	11-8-21 10:30A	1					X	X															
cc5	Fecal Sludge 4	11-8-21 10:30A	1					X	X															
cc6	Fecal Sludge 5	11-8-21 10:30A	1					X	X															
cc7	Fecal Sludge 6	11-8-21 10:30A	1					X	X															
cc8	Fecal Sludge 7	11-8-21 10:30A	1					X	X															

Relinquished By		Date/Time		Received By		Date/Time	
DAD Kelly Klostermann		11-8-21 10:50A		Kelly Klostermann K. Hay		11/8/21 1050	
		11/8/21 1335				11/8/21 1335	

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 68189



4/2